California MEDICINE

OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION

VOL. 72 FEBRUARY 1950 No. 2

What's New in Pediatrics

Communicable Diseases

EVELYNNE G. KNOUF, M.D., *South Pasadena*

CHEMOTHERAPEUTIC AGENTS

EACH new chemotherapeutic agent which makes its appearance on the medical horizon is welcomed eagerly. It is used many times, unfortunately, with careless abandon. All are double-edged swords, healing when correctly used, jeopardizing when misused. Information regarding toxic manifestations is available only after careful observations honestly recorded.

Penicillin, now the elder brother of the antibiotics, is used so widely that it is wise to be reminded that this relatively harmless, non-toxic agent does produce untoward reactions. These may be immediate or Herxheimer-like with shock and death, or they may be delayed, causing discomfort to both patient and physician. Frequently, allergic reactions are observed, namely, urticaria, laryngeal edema, fever, dermatitis exfoliativa, neuritis, exacerbations of epidermophytosis and epidermophytids, and dermatitis venenata, when the drug is used topically.

Streptomycin is one of the antibiotics which early was considered to be comparatively innocuous. Time and use have decided otherwise. Many reports of toxic reactions are appearing in the literature. The most constant untoward manifestation recorded is temporary or permanent impairment of the function of the eighth nerve. Fever, dermatitis, eosinophilia, pruritus, conjunctivitis, and local irritation at the site of injection have been noted singly or in combination in the use of this agent.

Head Physician, Communicable Disease Unit, Los Angeles County Hospital; Assistant Clinical Professor of Medicine, University of Southern California Medical School; Associate Clinical Professor of Medicine, College of Medical Evangelists.

Presented as part of a Panel Discussion on What's New in Pediatrics before the Section on Pediatrics at the 78th Annual Meeting of the California Medical Association, Los Angeles, May 8-11, 1949.

In the communicable disease unit of the Los Angeles County Hospital it has been noted, on many occasions, that when streptomycin is given intrathecally (in tuberculous and influenzal meningitis) patients develop an immediate shock-like picture with cyanosis, rapid pulse, coma, opisthotonos, within a few minutes after administration. This has occurred sufficiently often to cause serious consideration of abandoning intraspinal use of streptomycin in influenzal meningitis.

Beham[2] and associates (New York) reported three cases of painful, erosive, membranous stomatitis involving the entire oral mucous membrane as well as the undersurface of the tongue. When the drug was discontinued the lesions disappeared in 14 days. Retreatment caused a rapid appearance of the lesions.

Hunnicutt[7] and associates reported a fatal case of toxic encephalitis caused by streptomycin. McCullough[13] and co-workers, in the treatment of brucellosis with the combined use of sulfadiazine and streptomycin, report two cases of severe encephalopathies. These occurred within a few hours after the first dose of streptomycin. They feel that the toxic effects on the nervous system have been frequent enough, when the two drugs are used in combination, to warrant considering the possibility that the combined use of the drugs increases both toxicity and clinical effectiveness. They recommend that such treatment be reserved for the seriously ill. (Toxic dermatitis develops in physicians and nurses handling this drug constantly.)

Aureomycin is one of the newer antibiotics derived from a strain of Streptomyces aureofaciens. It is a crystalline hydrochloride salt soluble in distilled water, less soluble in isotonic saline solutions. These

solutions are acid with a ph of 4.5. The drug deteriorates rapidly at room temperature in alkaline solution. It is bacteriostatic and bactericidal, the latter only in high concentrations. Herrell[5] at the Mayo Clinic has shown that aureomycin is readily absorbed in the general circulation. After a single oral dose of 0.75 gm. to 1 gm. the serum content of the drug rapidly approaches therapeutic levels. A constant level is maintained for several hours. There may not be complete disappearance from the serum for 24 to 30 hours. When 0.75 gm. to 1 gm. was given orally every six to eight hours, the serum concentration varied between 2 and 4 micrograms, or, on occasions, 8 micrograms per milliliter. These studies also showed that aureomycin diffuses into the spinal fluid in amounts that may be effective, into the pleural fluid, and through the placenta into the fetal circulation. It is excreted in large amounts in the urine and bile. Too, it is found in the kidneys, liver, lungs and spleen.

Aureomycin stands as a signpost pointing in three directions, giving promise of showing the way toward conquest of a large variety of Gram-positive and Gram-negative bacteria, the rickettsial diseases, and virus infections of the psittacosis-lymphogranuloma venereum group.

Aureomycin is usually given orally in doses of 50 mg. per kilogram of body weight per 24 hours, in divided doses given at intervals of two to six hours. To date the toxic effects have been minimal. Nausea, vomiting, and cystitis may occur due to the acidity of the drug.

Chloromycetin is obtained from cultures of the species Streptomyces venezuelae. Also, it can be prepared synthetically. It promises to be the most valuable therapeutic agent in the treatment of typhoid fever, typhus fever, scrub typhus, Rocky Mountain spotted fever, brucellosis, and bacillary urinary infections as well as in primary atypical pneumonia. It would appear to be relatively nontoxic to humans. High blood levels have been found within 30 minutes after oral administration, and appreciable amounts in the urine in the same period of time. The usual dosage is 50 to 60 mg. per kilogram of body weight initially and then 0.25 gm. every two to four hours.

Garlicin, a new antibiotic, is extracted from garlic. In a study made by Machado[12] and associates the drug was shown to inhibit growth of the colon bacteria. Its activity is enhanced by the sulfonamides. When taken orally it is found in the blood; it diffuses into spinal fluid and it is eliminated in bile and urine. It is found in the latter in two hours after administration. It is non-toxic even when given in doses up to 700 times the maximal therapeutic dose. In the treatment of 300 patients with enteric infections, it was found that those with Shigella infections showed improvement on the second day and bacteriological cure in six days. The average total dose was 332 units over the period of six days. In Salmonella infections, including paratyphoid, there was improvement on the second or third day and cure in nine days. The average dose for the latter period was 363 units. Stools of 31 out of 35 patients with amebiasis became and remained negative with an average total dose of 550 units over 10.3 days.

BAL—Furmanski[3] of Birmingham Veterans' Hospital made a most interesting report on the use of this drug in the treatment of four patients with peripheral neuritis of infectious origin. The BAL used was 10 per cent solution of 2, 3-dimercaptopropanol with 20 per cent benzyl benzoate and peanut oil as the vehicle. It was given by injection once daily for 9 to 22 days. The dose was 1.5 mg. to 3 mg. per kilogram of body weight per day. Response to treatment was rapid. The author postulates that the "mode of action in these cases may be similar to that of the heavy metal intoxications, i.e., conjugation of a toxin or toxic metabolite which had inactivated the enzyme systems. It is also possible that in the cases of infectious origin BAL inhibits one of the essential enzyme systems of the virus and aids the cell in overcoming the invasion."

ASPECTS OF TREATMENT OF SOME OF THE COMMUNICABLE DISEASES

Brucellosis, a disease which may be acute, subacute, or chronic, was one of the first infectious diseases for which Koch's postulates were established; yet it remains a therapeutic enigma to clinicians in spite of a vast array of chemotherapeutic agents available. Gradually, however, data are being assembled with respect to the relative merit of the individual drugs and antibiotics so that thinking may be clarified about its treatment in the near future.

Dr. A. G. Bower, for many years chief consultant for and chief of staff of the communicable disease unit of the Los Angeles County General Hospital, has had wide experience in treatment of brucellosis. He emphasizes that the proper, intelligent use of the sulfa drugs will effect cures that are permanent. In his own words: "When no contraindication exists, and when the patient has never been treated previously with any of the sulfonamide drugs, treatment with sulfonamides has never failed to effect a cure in our clinic. Conversely, when patients have been given sulfonamide drugs in doses insufficiently large to effect a cure at some time before we have seen them, in no single instance have we ever subsequently cured a case with these drugs. The secret lies in maintaining accurately titrated high blood levels of sulfadiazine or sulfanilamide constantly present for a period of two weeks. This is a hospital procedure. The level is maintained at 15 mg. per cent or higher, and in those patients not making progress after several days of continued observation, fluids are carefully restricted for a day or two to increase the sulfa-levels in the blood. The reason these drugs fell into disrepute in the treatment of this disease was because doses were inadequate, blood levels were not ascertained and controlled, the patients were not hospitalized, and the treatment was

not continued long enough. If you are not successful in the first attempt, or if treatment has to be interdicted, it is useless ever to try it again."

Spink[17] and his associates in a report on 35 patients with brucellosis, nine of whom were treated with sulfadiazine and streptomycin, expressed the opinion that the combination was more effective than either agent used alone. Three of these nine patients had the chronic form of the disease, with manifestations of infection for three months or more. Spink recommended that streptomycin be given intramuscularly in doses of 0.5 gm. every six hours for seven days. Sulfadiazine should be initiated simultaneously with a dose of 4 gm. and then 1 gm. every four hours for at least two and preferably three weeks.

Herrell and Barber[6] of the Mayo Clinic recently reported that the combined use of aureomycin and dihydrostreptomycin appears to be the most effective method of treatment for brucellosis. Heilman of the department of bacteriology of the Mayo Clinic also found these drugs in combination to be the most effective method of treating Brucella infection in mice. Many combinations were tried—chloromycetin and sulfonamide, chloromycetin and aureomycin, chloromycetin and dihydrostreptomycin—as well as chloromycetin alone. None were as effective as aureomycin and dihydrostreptomycin. The recommendation for treatment is the administration of 3 gm. of aureomycin daily by mouth together with the simultaneous administration of 2 gm. of dihydrostreptomycin per day by the intramuscular route. In acute brucellosis the course of treatment should be 12 to 14 days. This method of treatment has the advantage of causing very little inconvenience to the patient. Also, possibility of toxic manifestations are minimized inasmuch as singly or together the two drugs, aureomycin and dihydrostreptomycin, are less toxic than when regular streptomycin alone or sulfadiazine alone, or the two in combination are used.

According to Parke, Davis and Company six patients with brucellosis, five of whom had positive blood culture, were successfully treated with chloromycetin with an average total dose of 17.5 gm. per patient. The average duration of fever was 2.4 days. On the basis of this it has been recommended that the patient with acute brucellosis be given an initial dose of 60 mg. per kilogram of body weight and 0.25 gm. every three hours thereafter for at least two and preferably three weeks.

Typhoid fever. Before the use of typhoid bacteriophage, more particularly type-specific phage, the treatment of this disease usually consisted of general supportive measures or occasionally immuno-transfusion. Typed phage has established itself as an effective mode of treatment of this entity.[10] In the recent past it has been responsible for lowering the mortality rate of 5 per cent in the communicable disease unit of the Los Angeles County General Hospital.

Since the advent of chemotherapy, each new drug and antibiotic has been used upon its appearance, in the treatment of typhoid fever with hopeful expectancy. All have failed except chloromycetin. From all indications, chloromycetin appears to produce the desired effect within a very short period of time, and with no toxic side-reactions.

Woodward, Smadel and associates[19] reported ten cases of typhoid fever treated with chloromycetin with cure in all, even in one patient with massive intestinal hemorrhage and in another with intestinal perforation. The drug was given orally with an initial dose of 50 mg. per kilogram of body weight and 0.25 gm. thereafter every two hours until the temperature was normal; this same dose was given every three to four hours during the first five days of normal temperature. Improvement was noted in 24 hours. The average duration of fever after treatment was started was 3.5 days. There were two relapses after 10 to 16 days without fever; however, in these cases the patients responded well to the second course of the drug, no lack of sensitivity to the drug having occurred.

During March of 1949, two children acutely ill with typhoid fever were treated with chloromycetin in the communicable disease unit. One patient, an 11-year-old girl, received 3 gm. daily by mouth for six days, and then 1 gm. daily for four more days. Within 36 hours after starting treatment there was clinical improvement and in 72 hours the temperature dropped by crisis from 103°F. to 96°F. The second child was one year of age. She received 3 gm. daily by mouth for three days and 1.5 gm. each day thereafter for four days. Clinical response was almost the same as in the first instance, but in this case the temperature was normal in 48 hours.

Typhus fever. During the summer of 1948 nineteen patients with murine typhus were treated with aureomycin in Mexico. Observations were made by a group of investigators from the University of Guadalajara and the New York Hospital-Cornell University Medical College. Response to treatment was spectacular and recovery uniformly occurred by crisis. The average duration of fever was 1.7 days after starting therapy regardless of the day of illness on which the treatment was begun. There were no relapses in spite of the fact that seven of the patients were treated for only one or two days. Convalescence was uneventful. From observation, the investigators felt that the "lowest full effective dose was somewhere between 50 and 100 mg. per kilogram per day for a short interval of therapy." All patients, with the exception of one, received the drug orally. One patient was given aureomycin intravenously in doses of 200 mg. at eight-hour intervals during the first 24 hours and then at 12-hour periods on the second day. Improvement was so rapid that when the last dose (fifth) was given, the patient was completely asymptomatic as well as afebrile. There were no evident toxic reactions.

In November and December of 1947, in the province of Camacho, Bolivia, during an epidemic, Payne, Knaudt, and Palacios[14] treated patients suf-

fering from typhus fever with chloromycetin. Improvement was dramatic. One patient, 18 years of age, who on the third day of illness was extremely toxic and stuporous, was given 1.5 gm. of the drug by mouth once daily for two days. Fever and symptoms were gone on the second day. The patient was discharged on the fourth day. The investigators found that chloromycetin was safe for intravenous use when given in doses of 10 mg. per kilogram of body weight for three days. They found that headache and vision began to improve ten minutes after the intravenous injection was finished. Oral administration was just as effective; but then eight to twelve hours were required before results were evident.

Rocky Mountain spotted fever, an infectious disease caused by Rickettsia rickettsi and transmitted by the bite of ticks, first observed in the western section of the United States, now has been reported from every part of the country. It is a disease with acute fulminating symptoms, an incubation period of seven days, and is characterized by a hemorrhagic macular or confluent rash of the entire body. The mortality rate may vary between 10 and 50 per cent. Prior to para-aminobenzoic acid, with the exception of hyperimmune rabbit serum, the treatment was chiefly symptomatic and supportive.

Tichenor and co-workers[18] of Washington, D. C., reported eight patients treated with para-aminobenzoic acid with no deaths, as compared with a 10 per cent death rate in a control group. The dose schedule followed, in children, was 0.33 to 0.5 gm. per pound of body weight per 24 hours given at two-hour intervals; and, for adults, 6 gm. as an initial dose and 4 gm. at four-hour intervals. Treatment with the drug was continued for seven days, or, for approximately two to four days after temperature reached normal. There was a suggestion of liver dysfunction by changes produced by cephalin flocculation tests and prothrombin times.

Very encouraging results with aureomycin were reported by Ross and co-workers[16] in 13 cases treated since June, 1948, in Washington, D. C., and Baltimore. The maximum dose of the drug given was 5 mg. per kilogram of body weight at hourly and then two-hour intervals until the temperature reached normal, after which time it was given every four hours for a period of 48 hours. The average period of treatment was six days. There were no relapses and no toxic symptoms or signs. There were no deaths and the average hospital stay was eight days. Aureomycin is preferred to para-aminobenzoic acid because it is clinically more rapidly effective and because of absence of liver and kidney damage.

Pincoffs and associates[15] treated 15 patients with chloromycetin. Quite dramatically the temperature dropped to normal in 76 hours after the initial dose. Symptomatically there was some improvement in the first 24 hours with pronounced diminution of headache, etc., in 48 hours. It is recommended that the initial dose be 60 mg. per kilogram of body weight, then 0.25 gm. every three hours until the temperature remains normal for 48 hours.

Q fever is a disease caused by Coxiella burneti, closely related to the Rickettsia. It tends to occur endemically in the milkshed area of Los Angeles County. The disease usually has an abrupt onset either with rhinoconjunctivitis, or severe headache with retro-orbital pain followed by blood-tinged sputum, and chest pain. The leukocyte count may be normal or slightly elevated. Complement fixation tests usually do not show positive reaction until the third week.

During the past year in the communicable disease unit two patients who had this disease were treated with streptomycin and two with aureomycin. One 30-year-old male with history of illness of four or five months' duration received 2 gm. of streptomycin daily, or 0.5 gm. four times per day for six days. The temperature, which had varied between 103°F. and 104°F. dropped to normal on the fourth day. The patient remained symptom-free and afebrile thenceforth. Complement fixation was in dilution of 1:1,024. The second patient, a male 53 years of age, received streptomycin in doses of 2 gm. daily for five days. On the second day of treatment the generalized body pains and throbbing headache disappeared. The third patient, a man of 36 years, received aureomycin in doses of 500 mg. four times a day for six days. The temperature promptly dropped from 103°F. to normal, and clinical symptoms subsided in three days. The fourth patient with Q fever was a man 36 years of age who received 1,000 mg. of the drug four times a day for nine days. The temperature reached normal in three days and the patient was completely asymptomatic in 24 hours.

Tularemia stands out as one disease in which streptomycin is unequivocally indicated. The clinical effect is prompt and usually dramatic. Fever is down on or before the third day; the headache, malaise, mental depression are gone in 24 hours. Within 24 to 48 hours buboes decrease in size, and ulcers show signs of healing. In pneumonic tularemia, which previously carried a mortality rate of 20 to 40 per cent, the curative value of the drug is most spectacular. In severe primary atypical pneumonia, where tularemia may be etiologically suspected, a therapeutic trial with this drug may be life-saving. Inasmuch as streptomycin does not inhibit appearance of diagnostic agglutinins there would be no reason for withholding the drug.

Since the advent of streptomycin, three patients with tularemia have been treated with the drug in the communicable disease unit. One man, aged 37, with the ulceroglandular type, had been ill for one week before entry and the temperature spiked daily to 103°F. before streptomycin was given. The patient had a normal temperature and was clinically asymptomatic in 36 hours after starting treatment. He was given a total of 8 gm. in divided doses over a four-day period. The remaining two patients were husband and wife. Both gave history of chills, fever,

and development of an ulcer on the hand four days after dressing wild rabbits. The man, aged 55, had the ulceroglandular type only. He was given 1.6 mg. of streptomycin over a four-day period. Temperature was normal eight hours after the first dose and there was pronounced evidence of healing of the ulcer with disappearance of the glandular enlargement on the fourth day. The wife, aged 63, had pneumonic involvement in addition to an ulcer on the right thumb. She was given a total of 2.2 gm. of streptomycin over a four-day period. The temperature dropped from 103°F. to normal in 24 hours. The pneumonia was gone and there was almost complete healing of the ulcer by the fourth day. The small doses used in these two cases were not a matter of choice but of necessity because of the difficulty in obtaining the drug at that time.

Actinomycosis involving the central nervous system is considered to be fatal in all cases. Thus, Jacobson and Cloward's[8] report of a case of actinomycosis meningitis with recovery is received with enthusiasm. This patient had signs of mental illness for 18 months before onset of acute signs of meningitis. The latter was diagnosed positively by the finding of Actinomyces in the spinal fluid. After two months of intensive treatment with penicillin, sulfadiazine, and streptomycin the patient was discharged from the hospital completely recovered from mental illness as well as the meningitis. There has been no evidence of relapse. Although all three drugs were used simultaneously, the patient first began to show signs of improvement when streptomycin was added. The latter was given intramuscularly and intrathecally, a total of 26 gm. in six days.

Arnold and Austin[1] in Hawaii reported cure of actinomycosis of the jaw with Diasone® (disodium formaldehyde sulfoxylate diamino-diphenylsulfone). The drug was given orally in accordance with the dose used by Dr. Fernando Latapi of Mexico City, who observed that the drug cured three patients. The dose used was that employed in Mexico in the treatment of leprosy: 1 gm. daily for the first week, 1.3 gm. (20 grains) daily for the second week and 1.6 gm. daily thereafter. By the end of the fourth week there remained only a residual fibrotic nodule less than one-sixth the size of the original mass.

Pertussis is one of the most serious of the acute contagious diseases of childhood and results in more deaths in children under two years of age than diphtheria, measles, scarlet fever and poliomyelitis combined. Early diagnosis, efficient nursing care and intelligent medical supervision, together with the use of the sulfa drugs, penicillin, and hyperimmune pertussis serum have helped diminish the deadliness of this scourge.

Because of its effectiveness against pertussis organisms in vitro, streptomycin was used in treatment by Gordon[4] and co-workers in a controlled series (27 treated and 28 controls) of cases. It should be noted that 23 of the 27 patients treated were under eight months of age. The dose of the drug was 25 mg. per pound of body weight per 24 hours. This daily total was divided by eight and given intramuscularly every three hours for an average of seven days. Some improvement was noted in 24 to 48 hours. Definite improvement occurred in three to four days. Mortality in the control group was 39.3 per cent as compared with 7.4 per cent in the treated group, but there was no significant improvement in the length of hospitalization when the two groups were compared.

The aerosol route of administering streptomycin is reported as most satisfactory by Leichenger and Schultz.[11] One gram of the drug was dissolved in 8 cc. of normal saline solution; 1 cc. of this was given every three hours. The solution was nebulized by attaching a Vaponefrin nebulizer to an oxygen tank, and administered via an infant-sized nasal mask (B.L.B.). The rate of flow of oxygen was 4 to 6 liters per minute and the average period of time to administer an aerosol dose of streptomycin was from 7 to 10 minutes.

In the communicable disease unit the triple use of hyperimmune pertussis serum (Cutter's Hypertussis), sulfamerazine and sulfadiazine in combination, and penicillin, has proved efficient, and streptomycin has been reserved for patients who are not making the usual satisfactory response. During 1946 the mortality rate was 3.7 per cent and in 1947 to 1948 it was 2.8 per cent, or an average of 3.2 per cent for the two-year period. This is an excellent death rate considering that about 80 per cent of the patients were under two years of age and over 50 per cent had complications on entry.

To cure a disease is praiseworthy; to prevent it is a finer accomplishment. There is no longer any valid excuse for postponing immunization for pertussis. It can be instituted on the first day of life, if desired. Certainly it should not be delayed beyond the third or fourth month. Because of studies made and others in process more doctors are giving not only pertussis immunization but combined immunizations at earlier ages than the time-honored six months. For the past three years it has been the practice of the author routinely to commence immunization with the combined antigens (alum precipitated diphtheria, pertussis and tetanus toxoid) at three months of age, giving three injections at four to six-week intervals and following with a booster injection within six to nine months. Amazingly few reactions are encountered.

REFERENCES

1. Arnold H. L., Austin, E. R.: J.A.M.A., 138:955, Nov. 27, 1948.

2. Beham, H., Perr, H.: J.A.M.A., 138:495-496, Oct. 16, 1948.

3. Furmanski, A. R.: Archives of Neurology and Psychiatry, 60:270-278, September 1948.

4. Gordon, V. H., Almaden, P. J.: Journal of Pediatrics, 34:279, March 1949.

5. Herrell, W. E., Heilman, F. R.: Proceedings of the Mayo Clinic, March 30, 1949.

6. Herrell, W. E., Barber, T. E.: Proceedings of the Mayo Clinic, March 16, 1949.

7. Hunnicutt, T., Graf, W. J., Hamburger, M., Ferris, E. B., Scheinker, I. M.: J.A.M.A., 137:599-602, June 12, 1948.

8. Jacobson, J. R., Cloward, R. B.: J.A.M.A., 137:769, June 26, 1948.

9. Knight, V., Ruiz-Sanchez, F., Ruiz-Sanchez, A., McDermott, W.: American Journal of Medicine, 6:407-416, April 1949.

10. Knouf, E. G., Ward, W. E., Reichle, P. A., Bower, A. G., Hamilton, P. M.: J.A.M.A., 132:134-137, Sept. 21, 1946.

11. Leichenger, H., Schultz, A.: Journal of Pediatrics, 33: 552, November 1948.

12. Machado, P. De A., Duran, M., Cross, J. D., dos Santos, D. C.: An. paulist. de med. e cir., 55:99-115, February 1948. Yr. Bk. of Gen'l Ther., Oscar W. Bethea, p. 134.

13. McCullough, M. B., Eisele, C. W.: J.A.M.A., 139:80-82, Jan 8, 1949.

14. Payne, E. H., Knaudt, J. A., Palacios, S.: Journal of Trop. Med., 51:68-71, April 1948.

15. Pincoffs, M. D., Guy, E. G., Lister, L. M., Woodward, T. E., Smadel, J. E.: Ann. Intern. Med., 29:656, 1948.

16. Ross, S., Schoenbach, E. B., Burke, F. G., Bryer, M. D., Rice, E. C., Washington, J. A.: J.A.M.A., 138:1213, December 1948.

17. Spink, W. W., Hall, W. H., Shaffer, J. M., Braude, A. I.: J.A.M.A., 136:382-387, Feb. 7, 1948.

18. Tichenor, C. J., Ross, S., Preston, A.: Journal of Pediatrics, 31:1-22, July 1947.

19. Woodward, T. E., Smadel, J. E., Ley, H. L., Green, R., Mankikar, D. S.: Ann. Int. Med., 29:131-134, July 1948.

All That Queries is Not Queensland

As a mother with a defective child, many writers on medical subjects appear determined to bring to maturity the erroneous assumption that the "Q" in *Q fever* indicates the place in which the disease entity was first noted—Queensland, Australia. Indeed, so plausible is the error that glib reference to "Q (for Queensland) fever" persists in medical writing despite sound evidence that, had it not been for accidental geographic-pathologic coincidence, the"Q" might (confoundingly) have stood for, say, New South Wales.

Lennette made some effort to right the wrong in an article titled "Q Fever in California" which appeared in the August 1948 issue of CALIFORNIA MEDICINE. In a footnote to that article, Lennette said that he had had from Derrick, who first described the features of the disease as it appeared in Queensland, a personal communication to the effect that "Q" was not for Queensland but for "query" because of uncertainty as to identification. Queensland, it seems, was implicated merely because it was known to have been at the scene of the investigation.

It is to be hoped that, with this further admonition, medical writers will mend their ways p.d.q. (for quickly).